



Long-term strategy for environmental protection

Information for external stakeholders





Duslo, a. s., as one of the largest chemical companies in Slovakia and Europe, is interested in being part of the collective fulfilment of the EU target to become the first climate-neutral continent by 2050. This commitment places considerable demands on our company in relation to reducing the amount of greenhouse gas emissions.

Since 1990, we have implemented a number of investment plans, including a strategic variation from coal to natural gas in power sector, based on which we have reduced our direct CO_{2e} emissions by more than 70 % by 31 December 2023. Currently, the production of GHG emissions is steady and fluctuate depending on shutdown years or due to unpredictable events.

Despite previous enormous reduction of our direct CO_{2e} emissions, we remain proactive and we still looking for solutions how to reduce it further. Our main planned activity is the decarbonization of ammonia production, through investments in renewable energy sources such as a wind park, a photovoltaic power plant and a water electrolysis plant. These investments are nowadays under the EIA process. Besides this project, we are also intensively looking for ways how to use the CCS methods so that the project is economically sustainable, technically feasible and, of course, safe for people and the environment.

Our main decarbonisation activities implemented in 2023 are the installation of a rotary reducers (power generation from steam) and installation of a tertiary reduction during the nitric acid production (reducing the amount of N₂O emission). Other planned activity is the decarbonization of own energy consumption by installing photovoltaic panels on the roofs of buildings. A significant investment in a new large-capacity ammonia storage tank with a considerably higher level of safety should also be mentioned.

As active as we are in climate protection, we also approach air protection, the use of water resources. To protect air quality, we invest in modern separation equipment. In the protection of water resources, we base ourselves on the analysis of water stress, and despite the fact that our workplaces are located in a zone with a medium-low risk of stress and do not require a special approach to the collection and consumption of surface water, we have established procedures for its repeated use in production activities.

Our workplaces are not located in protected areas, so production activities do not threaten NATURA 2000 protected areas or areas protected by national legislation.

Our company Duslo, a.s. does not produce any product made from the commodities, that have an impact on deforestation and the reduction of the biodiversity.

Ing. Petr Bláha

Vice chairman of the board and General director of Duslo, a.s.

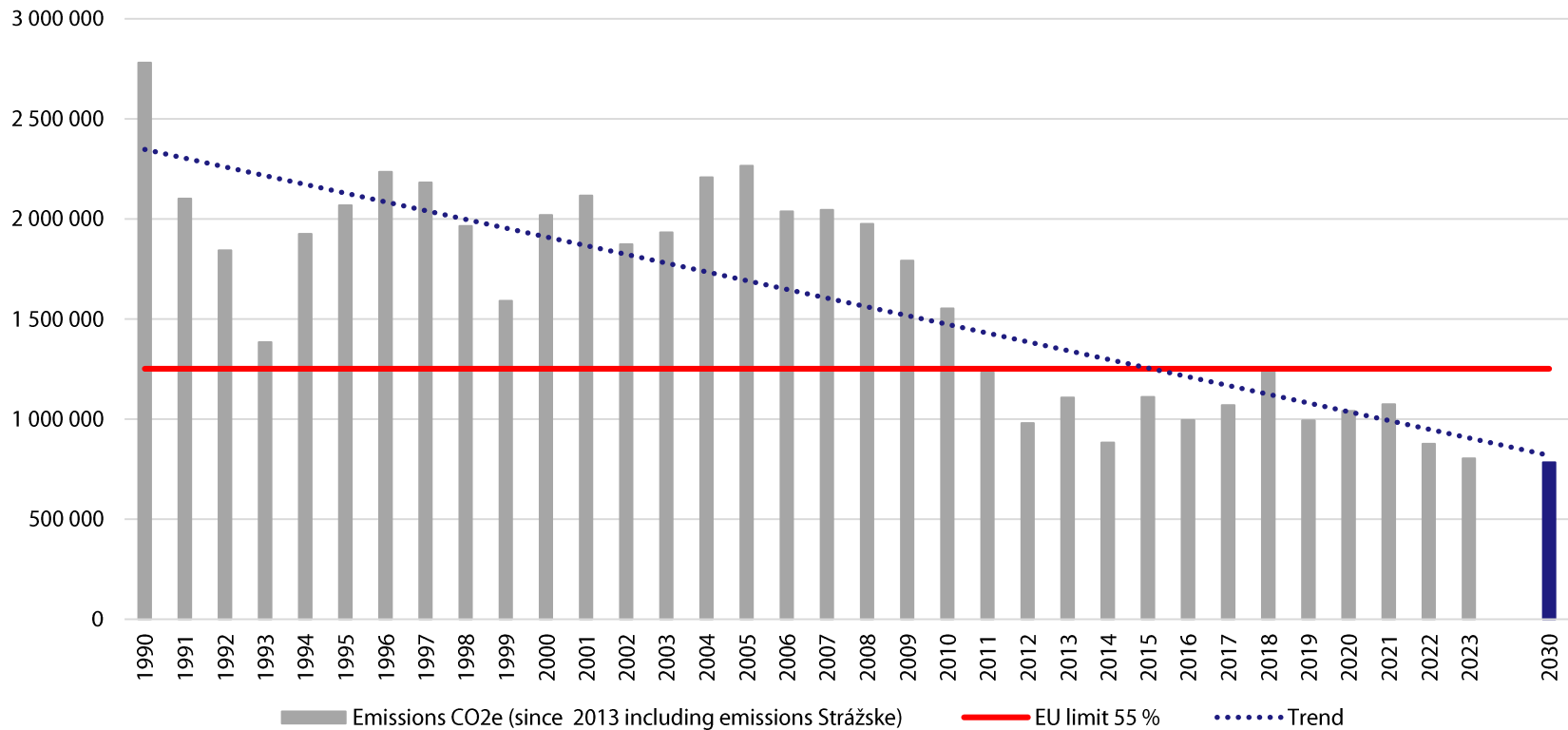
A handwritten signature in blue ink, appearing to read 'Petr Bláha', written over a blue ink scribble.



Long-term strategy for environmental protection

Reduction of greenhouse gas emissions 1990 – 2023 with a view to 2030

**Duslo, a.s. - production of CO_{2e} emissions
with an assumed view to 2030 (t/year)**



Reduction of greenhouse gas emissions 1990 – 2023 with a view to 2030

EU target – **55 %** reduction of EU greenhouse gas emissions by 2030 compared to 1990.

Duslo, a. s. between 1990 and 2023, it **reduced** CO_{2e} emissions by **71.44 %**.

Slovakia's goal – **43 %** reduction of Slovakia's greenhouse gas emissions by 2023 in the EU-ETS sectors compared to 2005

Duslo, a. s. between 2005 – 2023, it **reduced** CO_{2e} emissions by **64.95 %**.

The requirement to reduce CO_{2e} emissions in accordance with the EU/SR target was already fulfilled after 2010. The main measures were:

- replacing coal as an energy carrier with natural gas (1998-2007),
- installation of secondary N₂O reduction during the nitric acid production (2010),
- construction of the new Ammonia plant – Čpavok 4 operation, including the termination of the previous Ammonia plant – Čpavok 3 operation (after 2018),
- installation of tertiary N₂O reduction during the nitric acid production – KD3 operation (2023).

The graph also shows the projected decrease in CO_{2e} emissions until 2030, which should be achieved by the implementation of decarbonization projects such as:

- green ammonia (construction of renewable sources of electricity, including an electrolyser and a battery storage)
- tertiary reduction of N₂O in production of the nitric acid – KD2 operation
- use of excess steam for the production of electricity

Our company plans to invest considerable financial resources in decarbonization activities. Our company has received a 50 % grant from the Modernisation fund for the implementation of the Green ammonia project, total resources are calculated in the amount of 116,842,006.15 mil. €. For the installation of tertiary reduction to reduce N₂O emissions - KD2 operation, resources are estimated in the amount of approx. 10,5 mil. €.



A vision of future decarbonization activities 2030-2050

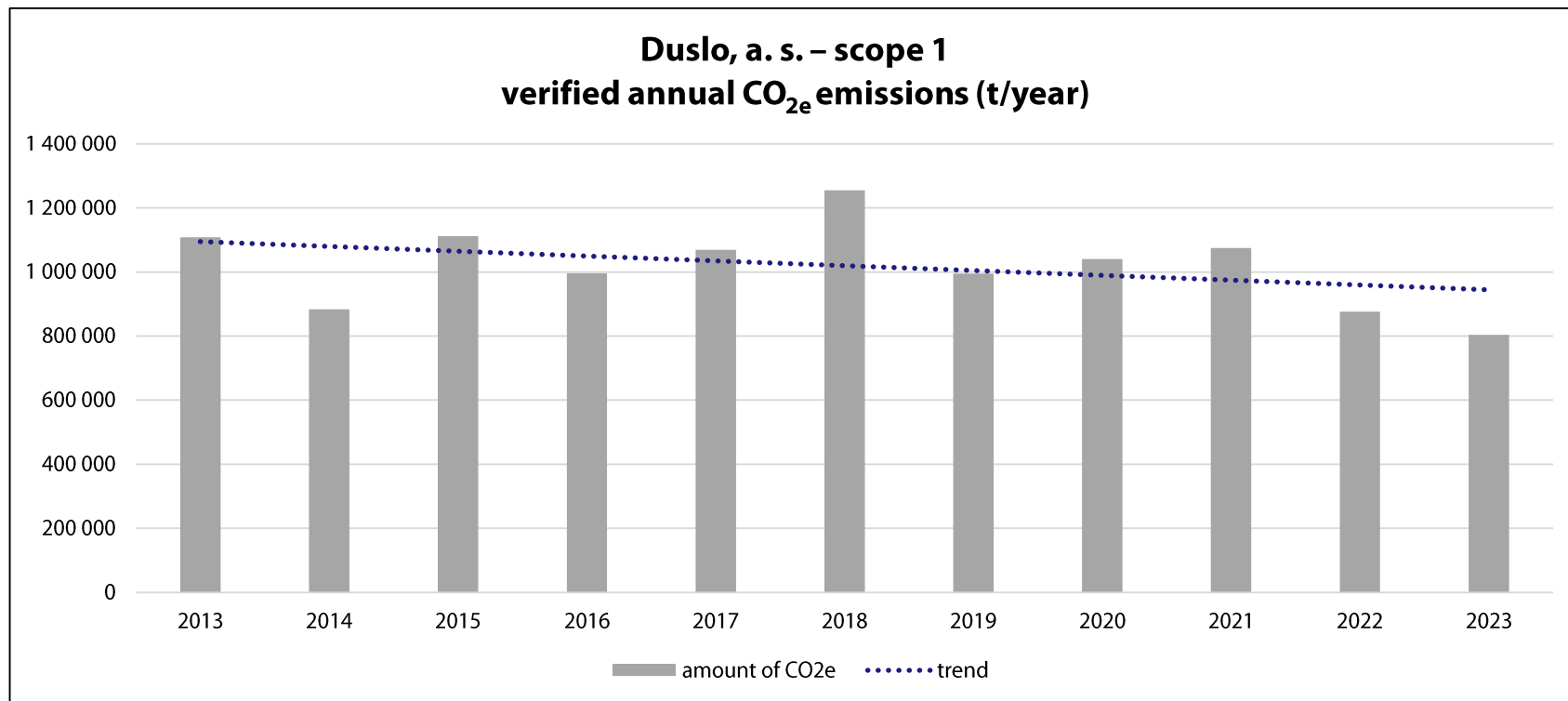
Duslo, a.s. works within the set vision and goal of participating in the achievement of Green Deal tasks. also with the following theoretical options, the implementation of which could lead to a reduction in greenhouse gas emissions from one's own activity:

- decarbonization of the energy sector - e.g. further construction of renewable energy sources
- decarbonization of ammonia production - the possibilities of using CCS/CCU methods, or the use of hydrogen that does not come from fossil fuels, are being explored



Greenhouse gas emissions

Direct and Indirect emissions in scope 1 and 2



Production of greenhouse gas emissions from own activity (scope 1) has a stable character. The decrease in 2023 compared to the previous years was caused by the shutdown at the Čpavok 4 operation.

In 2023, the company purchased electricity for its own consumption in an amount equivalent to 40.979 t CO_{2e} (scope 2).



Devices used to reduce pollutant emissions

Used separation devices for dust

- fabric filter
- cyclone separator
- washing system

Used separation devices for VOC, NH3

- safety gas burner
- keeping reservoirs under a nitrogen atmosphere and removing emissions for incineration in order to eliminate emissions

Odor elimination devices used

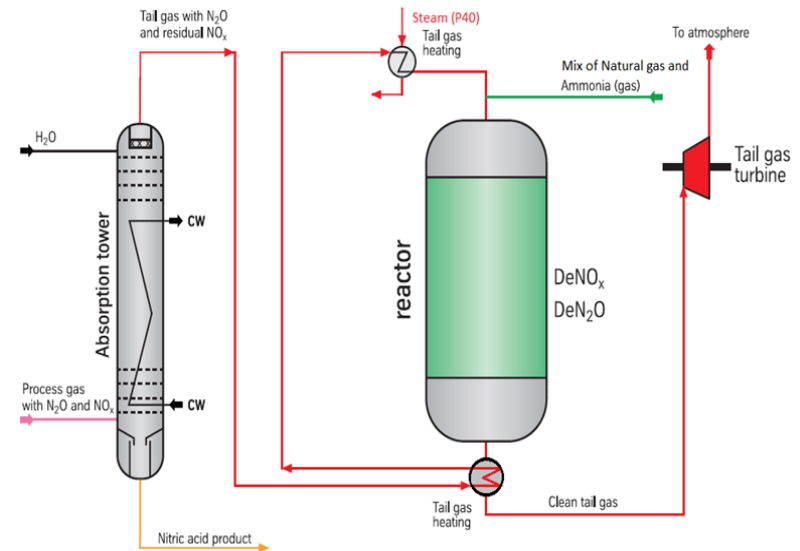
- safety gas burner
- keeping reservoirs under a nitrogen atmosphere
- removal of emissions for burning in order to eliminate odor emissions

Used equipment to reduce NO_x emissions

- tertiary reduction

Used separation equipment for heavy metals, SO₂

- absorption column (spray tower)

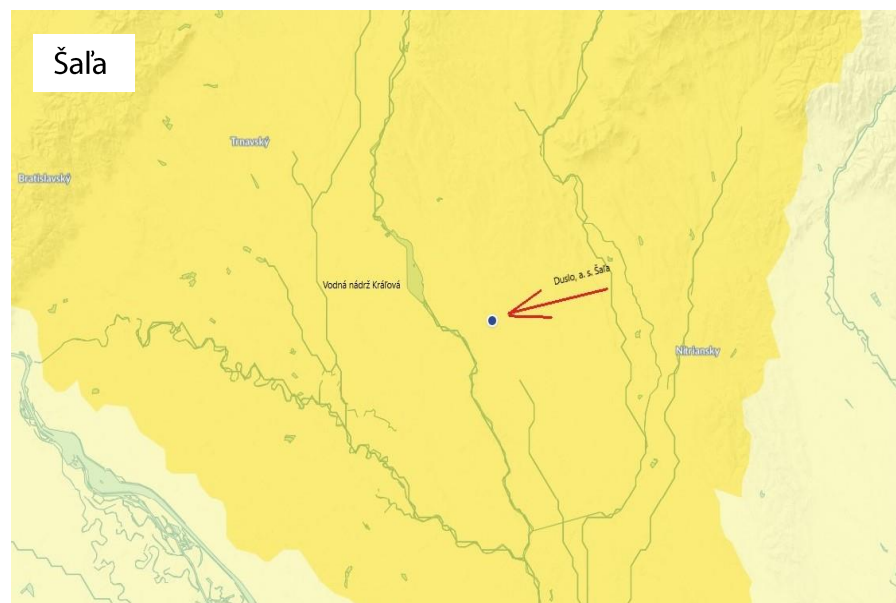


Picture: tertiary reduction of NO_x

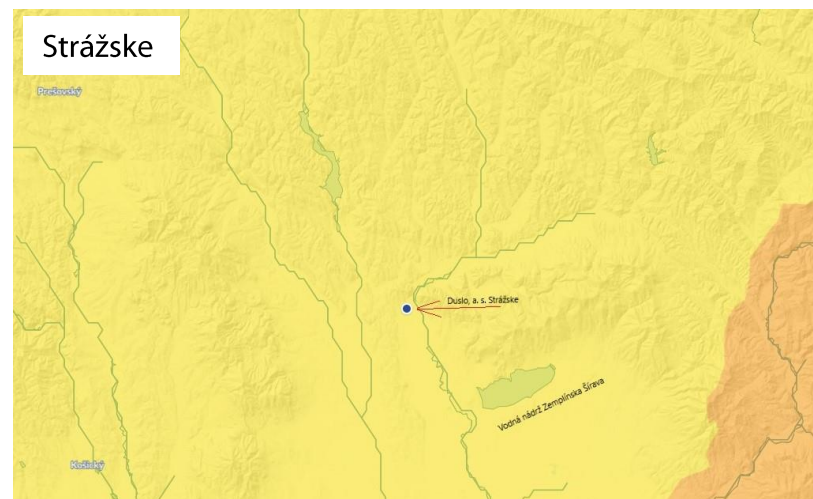
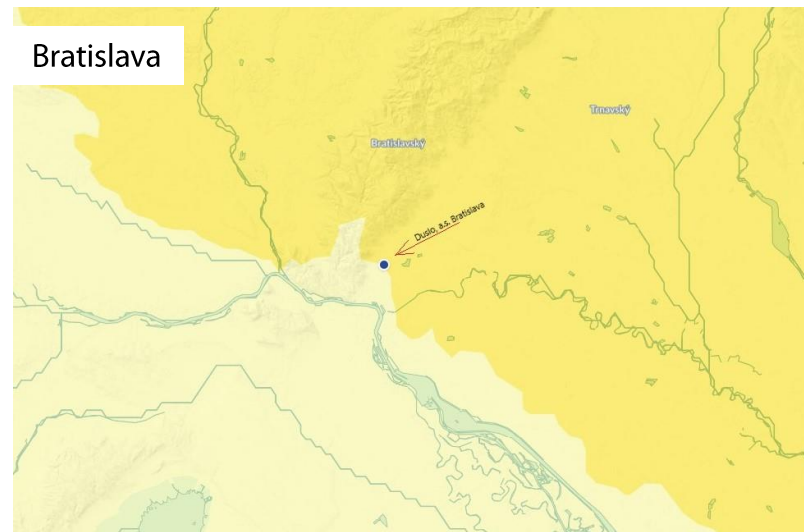
The location of workplaces in relation to the territory with the occurrence of water stress

Source: <https://www.wri.org/applications/aqueduct/water-risk-atlas>

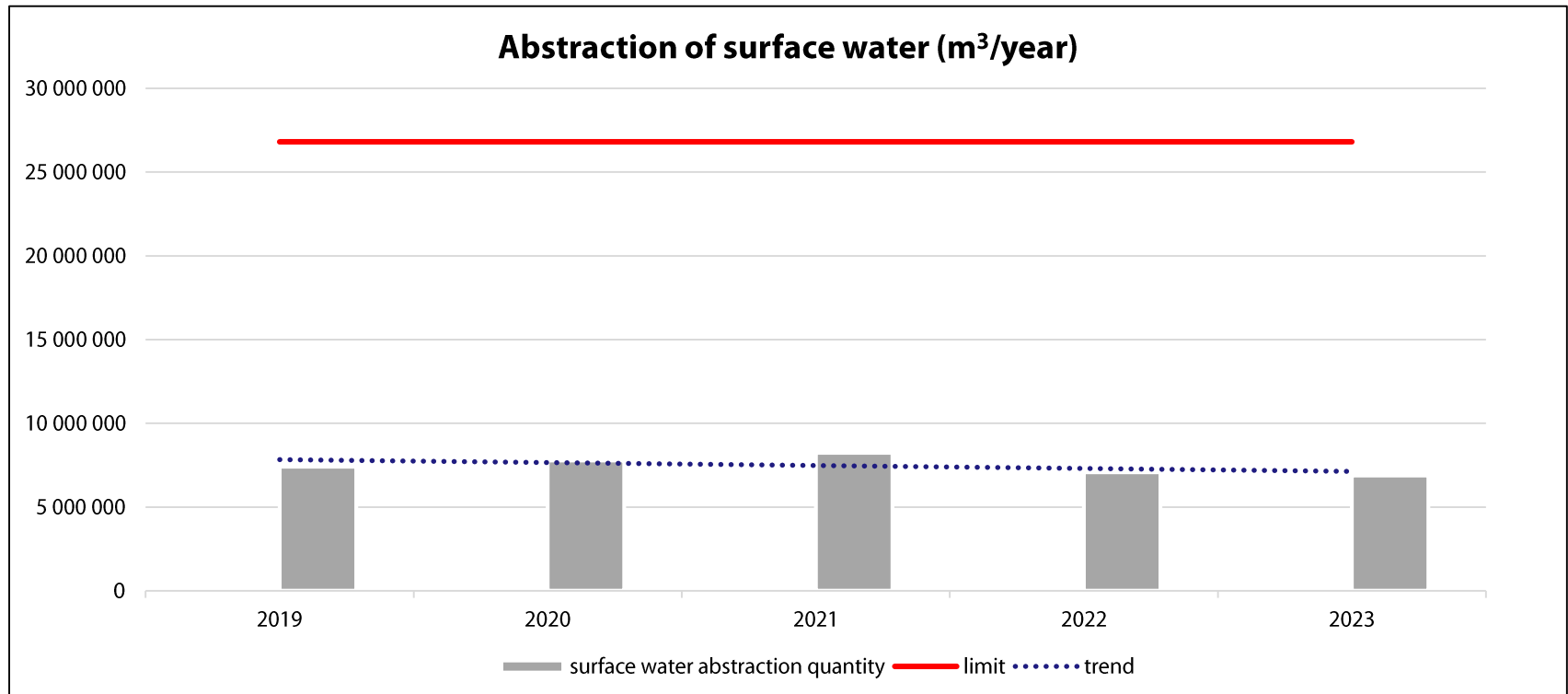
All workplaces Duslo, a.s. are located in a zone with a moderately low risk of water stress.



Overall Water Risk



Consumption of surface water for technological purposes



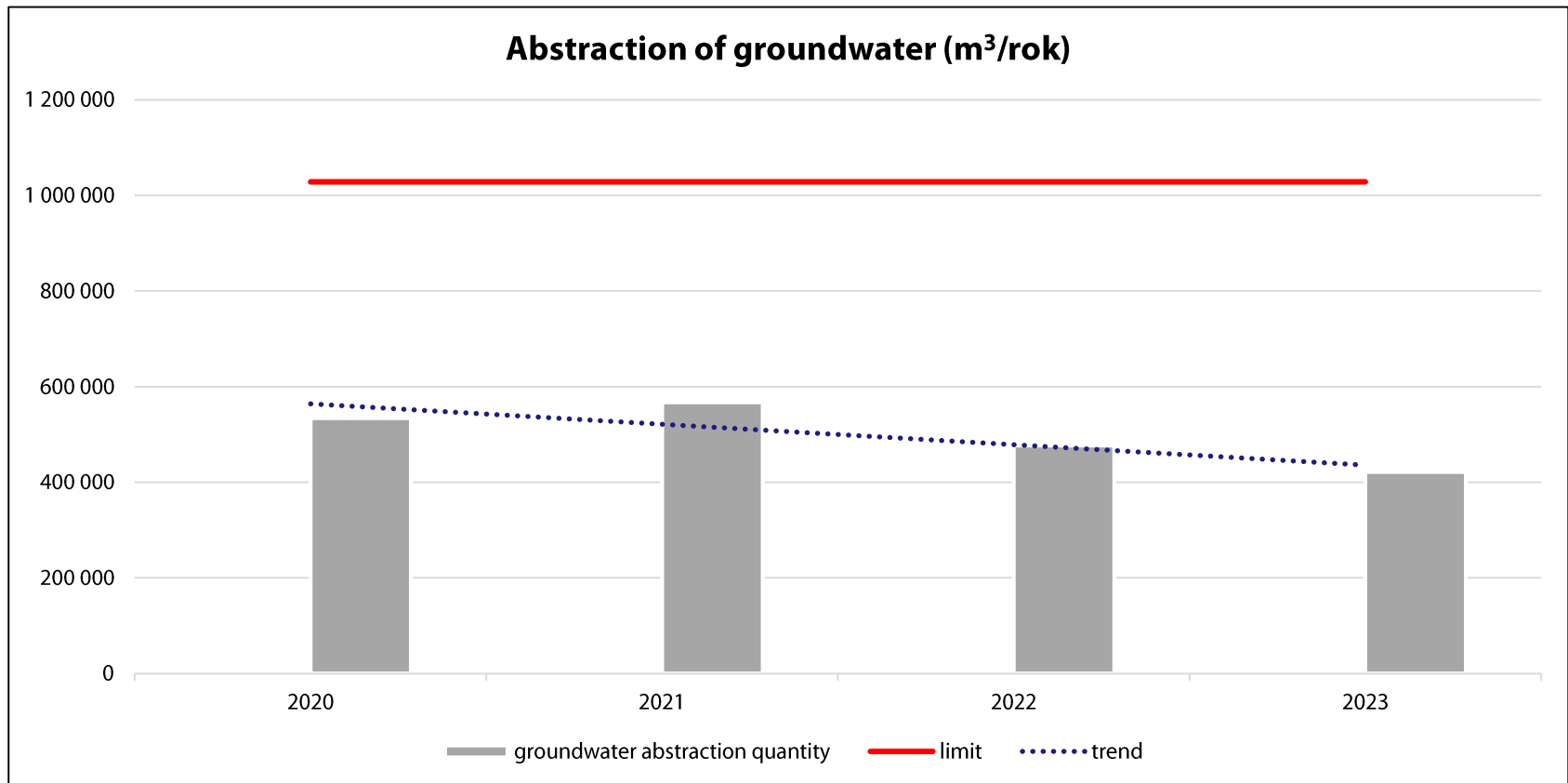
The company is authorized by the relevant state authorities to withdraw surface water from river Váh for technological purposes, in the amount of 26,805,600 m³/year, while our average annual consumption at the Šaľa workplace is at the level of 28% of the permitted value.

Water consumption for technological purposes has a stable character.

Water consumption is measured with a designated meter and the consumption data is sent to the state authority every year.

After wastewater treatment in the company's treatment plant, which meets the requirements of the best available technology (BAT), approximately 2/3 of the annual water volume is returned to the Váh recipient.

Groundwater consumption for drinking purposes



Duslo, a.s., Šaľa site has a set limit of 1,028,074 m³/year for groundwater abstraction for drinking purposes, while our average annual consumption at the Šaľa site is 46 % of the permitted value.

The consumption of water for drinking purposes has a stable character.

Water consumption is measured with a designated meter and the consumption data is sent to the state authority every year.

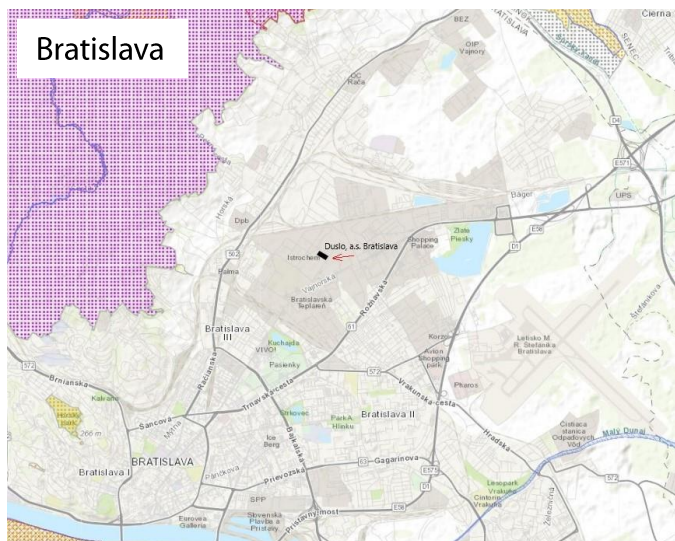
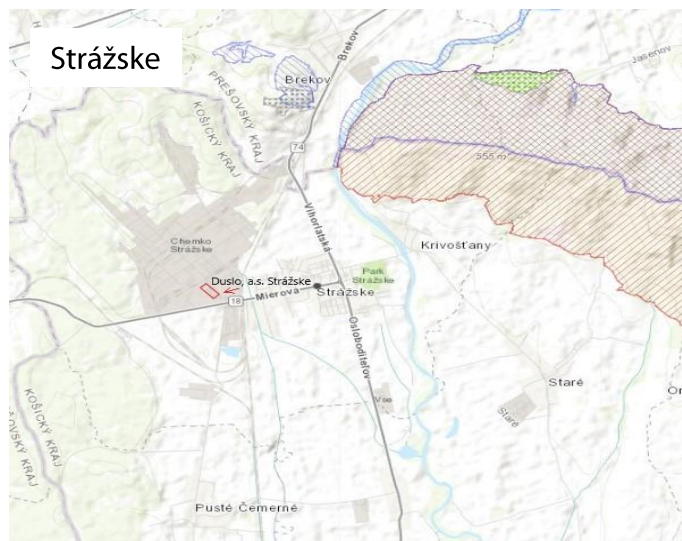
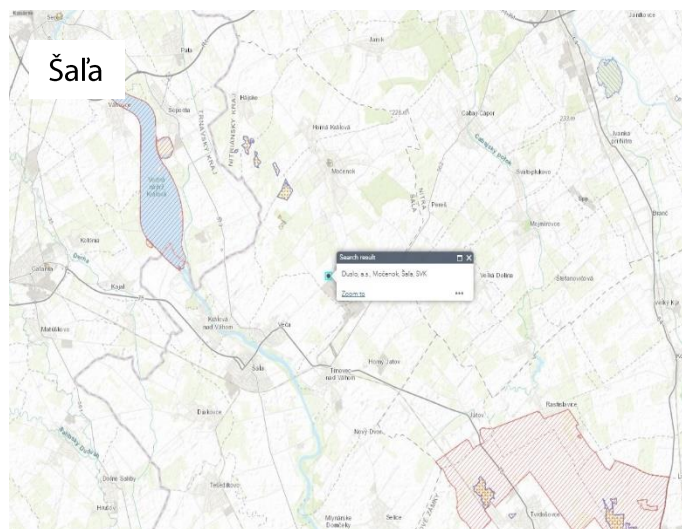
Location of workplaces in relation to protected areas

Source: European protected sites — European Environment Agency (europa.eu)

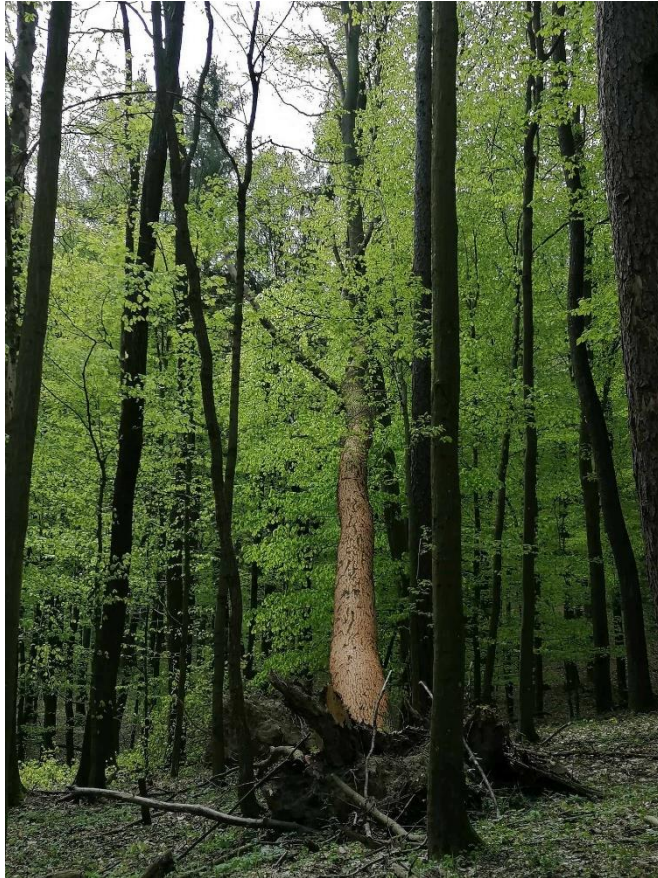
None of the workplaces of Duslo, a.s. is not found:

- in a protected EU area (NATURA 2000 – SPA, SAC)
- in a protected area according to national legislation (Act NR SR No. 543/2002 on nature and landscape protection)

The activity does not endanger protected areas or endangered species.



Relation between production and its impact on deforestation



Regulation (EU) 2023/1115 of the European parliament and of the council of 31 May 2023 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010 provides rules for the control of the production of products from commodities listed in Annex I in relation to deforestation process.

Mentioned Regulation does not apply to the activities of our company because Duslo, a.s. does not produce any product from the commodities listed in Annex I of this Regulation.

Affected commodities within the meaning of Annex I to the Regulation are:

- beef cattle,
- oil palm tree,
- rubber,
- cacao,
- wood,
- coffee,
- soya.

Conclusion

Prepared by: Ing. Richard Katunský and Team

The material was discussed by the Management Board of Duslo, a.s. and approved by the vice-chairman of the board and general director of Duslo, a.s.

Date of approval: 24 June 2024

